The Reality - there is no locked-in cellular advantage

- Furthermore, the history of the telephone industry itself shows the phenomenal growth which is possible. In 1894, at the time the basic Bell patents expired, the Bell companies had 270,381 telephone stations, and were growing at 6 percent a year. Over the next decade, the Bell companies' annual growth soared to 22 percent. *But by 1907, thirteen years later, independent companies had a market share of 48.8 percent.* *See* U.S. v. AT&T, Civil Action No. 74-1698, *Plaintiff's Third Statement of Contentions and Proof*, Vol. II, pp.1788-89, dated January 10, 1980.)

- Dr. Besen also offered the correct cautionary note when he observed the "considerable uncertainty" which accompanies surveys and forecasts about future behavior and market conditions. April 11 Transcript at pp.191-92. The Commission should acknowledge that the future is not, and cannot be, knowable -- and it should not try to shape that future according to a single, and singular, vision of what services may be offered in the marketplace. It should adopt a flexible regime which permits entry, aggregation and disaggregation, and allows aspiring providers to test their products and plans in the marketplace, and not the hearing room.

	The Reality - there is no locked-in cellular advantage • The fact of the matter is that cellular customers "churn" at annual rates of 24 percent, with 8.4 percent of cellular customers switching providers, and another 15.6 percent of cellular customers dropping cellular service altogether. *See* EMCI *U.S. Cellular Marketplace, 1993*, at pp.34-35. • Cellular service is not a necessity. The installed base of 16 million cellular subscribers is the result of a commitment by the industry, and investment in infrastructure to deliver a service customers value. **Similar competitive advantages are shared by cable companies and interexchange carriers like, for example, Time Warner and MCI, the second largest cable and interexchange companies, with 7.5 and 21.2 million customers respectively**. *See NCTA Cable Television Developments, June 1993*, at p.14-A, and FCC Industry Analysis Division report *Long Distance Market Shares: Fourth Quarter, 1993*, at p.11, Table 4. • Because cellular carriers commonly package equipment with the sale of cellular service cellular customers typically have not made an investment in CPE and therefore have no commitment to cellular. See generally Report and Order, CC Docket No. 91-34, Bundling of Cellular CPE, 7 FCC Rcd. 4028 at para. 19 (rel. June 10, 1992).

The Claim - cellular has a headstart	**The Reality - there is no locked-in cellular advantage**
• Mark Lowenstein also observed that one factor in maintaining the cellular "headstart" is the relative price insensitivity of business subscribers. *Id.* at p. 86.	• In fact, subscribership in the cellular industry is increasingly among personal users, and in 1993 personal usage surpassed business usage for the first time, 52 percent to 48 percent, respectively. *See* EMCI *U.S. Cellular Marketplace, 1993*, at p.33

The Claim - cellular has a headstart and big blocks are the PCS solution	**The Reality - there is no locked-in cellular advantage**
• Dave Twyver, Northern Telecom, suggested that it is important "to make sure that the new entrants have a level playing field, have the spectrum, the 30 MHz, and the MTAs that they need to avoid the incumbent microwave users initially and build up the capacity to match the cellular operators . . . to overcome the starting advantage that the cellular operators have." April 11 Transcript at pp. 102-03.	• The reasoning behind the proposal to "level" the playing field by awarding MTA licenses with seven times the capacity of analog cellular systems (since PCS systems will be digital from the start) is fundamentally flawed. As Dr. Irwin Jacobs, CEO of Qualcomm, noted, "initially the main issue is not going to be using all your bandwidth. You're not going to have enough customers to do that. So you're going to have to clear out a small amount of bandwidth. You're probably not going to use even 10 MHz; you're going to use the smaller part to get started." April 12 Transcript at p.117.
• Mr. Twyver also observed that the "30 MHz MTAs are attractive enough to attract capital, are big enough to allow current technologies to get a start, and avoid the incumbent microwave users for a period of time, and are big enough to allow businesses to build out broad and diverse services in those MTAs." *Id.* at p.104	• The suggestion that the long-term sacrifice of a limited public resource, the radio spectrum, is the proper solution to an admittedly short-term problem is contrary to the Commission's policies and objectives favoring technological innovation and efficient use of the spectrum. As Dr. C.J. Waylan, of GTE Personal Communications Services, observed: "30 MHz, in our opinion, is very generous. In fact, 30 MHz is so generous it may encourage some license winners to deploy spectrally inefficient technologies." April 11 Transcript at p.54.
• Dan Kelley of Hatfield Associates noted that he had heard "from people who are worried about the spectrum clearing problems in some of the existing bands that . . . you might get service to people faster and more ultimate competition sooner with a smaller number of larger allocations rather than a larger number of smaller allocations." *Id.* at pp.154-55.	

The Claim - cellular has a headstart and big blocks are the PCS solution	**The Reality - there is no locked-in cellular advantage**
• An unidentified speaker indicated that he had heard that it was not possible to be "a viable competitor with cellular or provide a viable wireless loop technology with 10 MHz allocation" but that with 30 MHz blocks "you are going to have a smaller number of total licensees, but you might have more effective competitors when you are all done at the end of the day." April 11 Transcript at pp.156-57.	• Dr. Irwin Jacobs of Qualcomm noted that a 20 MHz allocation can provide "more than eight times the capacity of a current cellular system. Similarly, a 10 MHz allocation will support more than four times the capacity of an existing cellular system." April 12 Transcript at p.43. And he concluded that he believes that "a PCS licensee could use any of the proposed block sizes -- 10, 20, 30 or even 40 MHz -- to provide a viable PCS service." *Id.*
• Lex Felker of Time Warner Telecommunications (TWT) argued for allocations of at least 40 MHz, and MTA-sized geographic markets. April 12 Transcript at pp.17-18. These arguments were predicated on a need to accommodate existing microwave incumbents, move quickly to market, and to lower the number the cell sites and thereby reduce the capital investment required for the PCS infrastructure.	• As Charles Jackson observed, "if you find the case of the advocates for 40 MHz-wide PCS licenses persuasive, interesting but ultimately unproven, then you should put out a channel plan such as six 20 MHz licenses which permits consolidation" or operation on an unconsolidated basis. *Id.* at p.28.
	• In fact, large PCS blocks will permanently limit competition in PCS, and use an admittedly short-term problem (which companies like American Personal Communications and Cox Enterprises are working around, and which the Commission's relocation requirements will resolve) to justify the long-term sacrifice of a limited public resource, the spectrum.

The Claim - cellular has a headstart and big blocks are the PCS solution	**The Reality - there is no locked-in cellular advantage** • In fact, the various projections which insist upon larger blocks as essential for service viability reflect presumptions about the marketplace at best -- and they may be as far removed from reality as the picturephone was in the 1960s, millimeter waveguide in the 1970s, and satellite telephone transmission in the 1980s. The Commission should not squander a limited public resource. It should allow companies to seek to acquire such assets if they truly consider them essential to their business plans, but it should not adopt those business plans as the sole pattern upon which to design an entire industry. • It is ironic that the voices who are most critical of the competitiveness of the cellular industry a PCS duopoly as the competitive solution, complete with attempts to carve out a unique market via ever-larger geographic markets (from MTAs to the prospective nationwide licenses suggested by MCI and Time Warner Telecommunications), fix market share, and erect barriers to entry.

The Claim - Microwave Relocation Will Delay the Rollout of PCS	**The Reality - Microwave Relocation Will Not Unreasonably Delay the Rollout of PCS**
• Jeffrey Rosenblatt of Comsearch opined that "Having a broader bandwidth for initial allocation will require less movements in the preinitiation of service, which would allow you to get some spectrum to get started to provide service. And maybe you would have to relocate some but not all of your microwave paths, which you could probably do." April 12 Transcript at p.80.	• A variety of means can ensure that microwave relocation will not unreasonably delay the rollout of PCS. As Lex Felker, Time Warner Telecommunications, suggested: "One other issue in terms of things the Commission might want to think about to sort of assist in the microwave process, beyond those things you've already done is to consider the possibility of relocating or coordinating on paper all of the links right now, or in short order, and so that they have a reservation at the 6-gig band that they can take advantage of in the future. Because if you try to sort of do these things piecemeal, the likelihood that you're going to optimally coordinate all these links is less than if you do it all at once." April 12 Transcript at p.82. • Limond Grindstaff, AirTouch Communications, also suggested that "when the issues come up about 40 megahertz, 20, megahertz and 10 megahertz, it's irrelevant. You need to move the microwave users out, and the FCC has taken steps to do that . . . . The last obstacle was the unlicensed band or the public safety users, and in my opinion those are probably the easiest people to move out because they could use the new equipment. From our discussions with them and our practical experience with them, they have approached us in San Francisco wanting to sell their links to us, and we keep telling them wait until we buy a license. . . ." *Id.* at p.86.

The Claim - Microwave Relocation Will Delay the Rollout of PCS	**The Reality - Microwave Relocation Will Not Unreasonably Delay the Rollout of PCS** • Charles Jackson of Strategic Policy Research also suggested that "Maybe there are things the Commission can do in its rules that will speed the process of agreement between the new PCS licensees and the microwave incumbent. "One idea that comes to mind is to set a ceiling on any excessive payment over the cost of relocation; a ceiling which would not come into effect until, say, 12 months have gone by. . . . [a] rule that said after 12 months the excess payment can only be 50 percent of the cost of the microwave system, it might focus the parties, particularly the parties -- the incumbent who might be -- who is reluctant to relocate since it's sort of a status quo situation and they might get more later. It might focus them on agreement in the short run." *Id.* at p.87. • "[O]n this question of the bandwidth, again, initially the main issue is not going to be using all your bandwidths. You're not going to have customers to do that. So you're going to have to clear out a small amount of bandwidth. You're probably not going to use even 10 megahertz; you're going to use a smaller part to get started." *Id. Accord*, Irwin Jacobs.

The Claim - Restrictions Foster Competition	**The Reality - Ownership Restrictions Are Bad Policy**
• Dan Kelley said that "promoting a competitive structure is not the same thing as using a merger guidelines analysis to prevent undue concentration. Your job is to promote competition not to prevent bad things from happening. And in the course of doing that you should provide opportunity for new entrants because that is going to bring the most competition to the market." *Id.* at p.224.	• There appear to be as many definitions of "competition" as there are projections of what PCS will be in the marketplace. However, merger guidelines analysis is a tool for observing what might constitute a threat *to competition, not* what is a threat *to specific competitors*. The policy which Mr. Kelley advocates in fact is not to the advantage of competition, but to specific PCS aspirants. Limiting entry, or foreclosing it, and adopting market structures which effectively create a policy deliberately advantaging a specific kind of player, to the disadvantage of all other players, does not hold out the promise of "innovation, investment, and efficient pricing." Companies subject to such advantages are freed from the competitive pressures which prompt such behavior. • Dr. Hausman notes that restricting eligibility "is the wrong foot to start off on in a market-based policy which this FCC is going to unless there are real fears that the cellular companies can actually exercise market power and hold prices above competitive level." *Id.* at p.219.

The Claim - Restrictions Foster Competition	The Reality - Ownership Restrictions Are Bad Policy
	• Daniel Trampush, of Ernst & Young, argued that "restrictions on ownership of cellular and PCS would be bad for customers in rural areas," since such restrictions would prevent joint operations which may reduce network costs. April 11 Transcript at p.44. • Dr. Jerry Hausman, MIT, criticized proposed restrictions as being at war with exploiting the economies of scope which have been identified with many providers -- from cable companies, to celcos and LECs -- and argued that the best way to achieve competitive benefits is to foster competitive entry. *Id.* at pp. 136-37. • Dr. Hausman noted that "nobody has argued, even tried to argue, that this is a natural monopoly situation where we have overwhelming economies of scale." *Id.* at p.150. Given that each of the potential entrants into the PCS marketplace (cable companies, interexchange carriers, cellular providers, local exchange carriers, and partnerships between and among them) possess differing efficiencies, preclusion of any one class of companies from being able to bid for PCS licenses threatens to impose an unnecessary handicap on the PCS marketplace.

The Claim - Aggregation is Contrary to Efficiency and Viability	**The Reality - Aggregation Is More Viable Than Blockbuster Allocations/Geography**
• Dr. Pepper asked the financial panel what sort of time delay they thought aggregation would produce, and what the consequences would be. • Ms. Nancy Peretsman of Salomon Brothers suggested that the better course of action would be to decide what the right size was, than to develop a process that "would expedite aggregation but allow for some seepage and all kinds of the cumbersome parts of transfers." April 11 Transcript at p.322.	• Dr. Besen, Charles River Associates, supported a flexible system in which "any of a wide variety of market structures is consistent with a relatively un-concentrated market for personal communications services" -- which the Commission by and large adopted -- and argued that the Commission should not try to identify a specific market structure as the "correct" one to produce competition in the PCS market. *Id.* at pp. 142-43. • Dr. Hausman, MIT, reasoned that the Commission should not worry about aggregation as a potential threat to the PCS market, and that the Commission should not be concerned about precisely how many competitors exist in the market "because so long as you have competition, [involving low cost providers] low costs are going to lead to low prices which benefit consumers and leads to greater output." *Id.* at p. 135-36.

The Claim - Aggregation is Contrary to Efficiency and Viability	**The Reality - Aggregation Is More Viable Than Blockbuster Allocations/Geography**
• Dan Kelley argued that "one of the reasons . . . that I thought a national license would be good, and one reason why I believe today it would be good to allow for a rapid aggregation up to national licenses is that is going to make it easier to get standards in place. I worry on the standards issue that if critical issues get referred to industry forums, those forums are going to be dominated by carriers who are in the market and have vested interest and therefore get bogged down." *Id.* at p.213.	• Dr. Besen suggested that the Commission might have an oversight role over the standard setting process, but that it should not itself try to establish standards -- especially given the "highly fluid nature of market demand and technology here." *Id.* at p.214. • Dr. Hausman also observed that he would be concerned about delay if the Commission attempted to enter into the standards business. *Id.* at pp.216-17. • Twyver of Northern Telecom observed that "I don't see any problem, technical problem at all, in accommodating any combination of 10s, and 20s, and 30s, and that type of thing." April 11 Transcript at p.111.

The Claim - Programming the Market - and Market Share - is Possible and Desirable	**The Reality - Engineering the Marketplace, and Market Share is Unnecessary**
• Mr. Donald Gips posed the question to the financial panelists of how many competitors was right for the marketplace.	• Herbert Wilkins expressed the belief that the size of the licenses and geographic areas should be reduced, and the number of license areas increased by two or three times in order to make them affordable. *Id.* at p.235.
• Ms. Peretsman suggested that the maximum is three, and that in some markets the right number of competitors is two, combined with the incumbents. Mr. Roberts agreed that the resulting four or five competitors was acceptable. *Id.* at pp.279-280.	• Regulation is a substitute for competition that seeks to replicate competitive results when there has been a market failure. There is no market failure and nothing to justify proposals to fix market share, establish barriers to entry, or otherwise gerrymander the PCS industry.
• While advocating significant engineering of the PCS marketplace, analysts such as Mr. Rissman and Ms. Peretsman avowed that they don't bring to the table "a professional sense of social engineering." *Id.* at p.334.	• In fact, these recommendations constitute engineering on behalf of one set of immediate entrants to the detriment of any subsequent entrants.

The Claim - Programming the Market - and Market Share - is Possible and Desirable	**The Reality - Engineering the Marketplace, and Market Share is Unnecessary** • Dr. Besen clearly indicated that he does not "think the right question is let's try to determine precisely what the optimal number or the irreducible minimum number is." *Id.* at p.161. Dr. Besen also noted the clear difficulty in attempting to evaluate the transaction costs involved in aggregation, in order to avoid "preventing certain transactions from being defeated because of the high costs of prearrangements." *Id.* at pp. 152-53, 198-99. • However, smaller blocks -- 10 MHz and 20 MHz blocks -- are better public policy than 30 MHz or 40 MHz blocks. If the Commission errs in establishing an ideal block size, it is easier for the market to correct the matter by aggregating up to some appropriate figure, than it is to try to correct an overly-large award. The market is not a remedy for such overly-generous grants, and government recapture of the resource is fraught with difficulty. It is wiser to adopt realistic building blocks, which are both viable in themselves and susceptible to aggregation, than it is to award 30 MHz or 40 MHz blocks in the name of creating viable competition, avoiding interference, and obtaining financing -- since the latter reasons shift and change, while the missed opportunity to wisely allocate spectrum is forever.

The Claim - That Cellular Entry will Foreclose Competition	**The Reality - There is No Justification for Presuming Cellular Will Restrain Competition**
• Dr. Pepper asked whether cellular's entry into the market (through acquiring spectrum) would "raise their rival's costs" or otherwise foreclose entry. April 11 Transcript at p.200.	• Dr. Hausman noted that cellular companies do not have power of price, lacking a vertical relationship controlling one of the inputs to PCS service provision -- since all providers will have access to spectrum. *Id.* at p.204 • Dr. Hausman also criticized the thesis that cellular companies could foreclose the market by acquiring spectrum, given the amounts which would remain available to other PCS providers. He concluded that "in terms of any anti-competitive outcome, I haven't heard a theory yet that, you know, has any basis in either economics or the historical facts of cellular." *Id.* at p.205.

The Claim - 10 MHz and 20 MHz Blocks Are Not Viable and Should Not Be Subjected to a Market Test	**The Reality - 10 MHz and 20 MHz Blocks Should be Tested for Viability in the Marketplace**
• Lex Felker of Time Warner Telecommunications concluded that the 10 MHz and 20 MHz blocks are "potentially unusable," and that "at a minimum we've got to have at least 30 MHz and hopefully 40 MHz assigned to them." April 12 Transcript at p.68.	• Mr. Twyver of Northern Telecom stated that 10 MHz blocks "are attractive for an innovative new player. They are attractive for low power local services, for wireless local loops, and for data access." *Id.* at p. 104. This is consistent with the position expressed elsewhere by Northern Telecom that 10 MHz blocks are viable, and that 20 MHz blocks are capable of providing both the above-referenced 10 MHz block services, and the high-speed, vehicular, and broadband data applications which some parties have argued require 30 MHz blocks. • As Dr. Waylan of GTE observed that 10 MHz licenses are valuable alone, and are the object of interest on the part of many cellular companies. *Id.* at pp.105-06. • Dr. Hausman of MIT was of the opinion that the 20 MHz blocks were the most viable. *Id.* at p.150. • Elliott Hamilton of EMCI observed that "Many 20 MHz BTA licenses appear to be viable as a stand-alone, high mobility, PCS business, particularly in the large urban markets." April 11 Transcript at p.49.

The Claim - Few Competitors and Large Allocations are Viable	**The Reality - Assumptions About the Marketplace Impact Conclusions about Viability**
• Daniel Kelley, of Hatfield Associates, argued that fewer and larger allocations are more viable. *Id.* at pp.154-55.	• The perceived threat to the viability to the smaller blocks (and smaller geographic areas) has its origins in the overpowering presence of the larger blocks and geographic markets.
• Mr. Jon Hulak, Senior Industry Analyst at BIS Strategies, observed that "we would expect that all the allocations would be filled in those types of markets [the top MTAs]. You go down into some of the smaller markets, I think it [the 20 MHz C block] could well be bypassed." *Id.* at p.114. However, he indicated that this was "not because it's not 30, it's because it's surrounded by so much else . . . . the larger players will go to the A and B blocks, [and] the cellular . . . companies will bid on the 10 MHz . . . . that leaves a very small community of interest for the C block." *Id.* at p.113.	• In fact, this is a circular and self-fulfilling prophecy. As has been noted before, Dr. Waylan and other experts have observed that smaller allocations are "substantially disadvantaged as compared to the 30 MHz MTAs." *Id.* at pp.105-06. • George Murray also observed that "the 10s and 20s are technically and economically feasible, but I think they're more economically and technically feasible if there are no 30s and they're all 20s and 10s." *Id.*

The Claim - Few Competitors and Large Allocations are Viable	The Reality - Assumptions About the Marketplace Impact Conclusions about Viability
	• The truth of the matter is that we cannot be sure what size blocks are best suited to the various business plans and technologies being developed by would-be PCS providers. Projections may be consistent with the assumptions an plans of the speakers, but that in no way captures the reality of the total marketplace. The Commission should continue its cautious and wise agnosticism, reflected in its broad definition of PCS, and not attempt to adopt a single vision of PCS and tailor policies adapted to pursuing that one vision. • Rather, to ensure compliance with the broad mandates of the Communications Act, the Commission should adopt a flexible policy which will foster broad participation, and permit aggregation of licenses like building blocks. • The Commission should permit any qualified party to pursue licensing in the PCS bands, subject to no unnecessary or unjustified restrictions, and should allow the marketplace to define PCS.

The Claim - Major Trading Areas (MTAs) Have Advantages Over Basic Trading Areas (BTAs)	**The Reality - Assumptions About the Marketplace Impact Conclusions about Viability**
• Elliott Hamilton of EMCI observed that "we see PCS having some unique advantages. . . . One of them will be the MTA license definitions. We believe the wide area -- starting out with a very wide area license -- will give them an advantage over some of the other industries, starting out." April 11 Transcript, at p.65.	• In fact, the greatest challenge to the viability of the BTA licenses may be the MTA licenses, based on the reaction of the financial panelists.
• David Kerr, BIS Strategic Decisions, observed that MTAs will overshadow BTA licenses. *Id.* at pp. 32-33.	• As Dr. Waylan of GTE noted, the BTA geography offers the advantages of being larger than cellular MSAs and RSAs, but it may be too small to permit effective competition against significantly larger 30 MHz licenses. *Id.* at pp. 54-55.
	• However, Mr. Herb Wilkins of Syncom supported small license areas and smaller blocks as calculated to promote both greater opportunity and the development of niche services which he considered crucial to achieving competition. April 11 Transcript at p.291. Larger license areas and blocks both reduce the numbers which are available, and place those which do exist out of the financial reach of many would-be players. *Id.*
	• Limond Grindstaff of Airtouch stated that their studies "support the BTAs, and the economics for the BTAs are much better than the MTAs. The cost of the license for the MTAs really puts your business on the negative for a lot longer than the BTAs where the license . . . will be less expensive and that you can concentrate your business[.]" April 12 Transcript at p.113.

The Claim - The Markets Will Hesitate to Fund PCS	**The Reality - Wireless Services Have Received Funding in the Recent Past, and Should Continue to Do So**
• Al Houston of AT&T Network Systems provided a brief explanation of the desire of investors to minimize risk and maximize returns, and the degree to which numbers of licenses, small geographic areas, and other factors may cause PCS to fail to appeal to investors, either debt or equity. *Id.* at p.228. • Al Houston expressed the belief that PCS will be funded through equity. *Id.* at pp.229-30. • Paul Rissman of Alliance Capital projected that in two years the potential subscriber base for PCS will be "25 to 30 percent penetrated with existing cellular services. Everything will be digital. Costs will have declined for the incumbents. . . . It will be a very full service cellular incumbent environment." *Id.* at p.239. • Nancy Peretsman of Salomon Brothers drew upon the examples of the financing of ESMRs, cellular companies, cable companies, other telecommunications entities by investment banks -- tying the investment to demonstration of a franchise value, of the willingness of other parties to acquire the property. She also made it clear that early strategic money or deep pockets were factors in the funding of those industries. *Id.* at pp.245-56.	• Commissioner Barrett drew from the three financial analysts the admission that none of their responses were based on technical considerations, but on the economic consideration that -- as Ms. Peretsman put it -- at some point the more competition in the marketplace the more uncomfortable they are with it. *Id.* at p.276. In short, they want a guaranteed return, and as little risk as possible, and big blocks with as few players as possible appeals to them. • In spite of some self-description as investors in growth opportunities, the position of the financial analysts is summed up in Mr. Rissman's statement that "I don't get paid for having vision. I get paid for spotting money-making opportunities." *Id.* at p.333. • Given his own statement that they "bought lots of cable stocks in the fall because we thought it was a good investment," [*Id.*] Wall Street's ability to project the future is more than a little questionable.

The Claim - The Markets Will Hesitate to Fund PCS	The Reality - Wireless Services Have Received Funding in the Recent Past, and Should Continue to Do So
• Mark Roberts of Alex, Brown & Sons, argued that the competitive prospects of PCS are advantaged by leveraging off of existing telecommunications networks, using "a minimum of 30 MHz of contiguous spectrum. . . minimum of an MTA license size." *Id.* at p.248. He argued that these elements were necessary to achieve a similar cost structure to cellular -- describing blocks of less than 30 MHz as "permanently lock[ing] in premium investment returns for the cellular industry . . . . inhibit[ing] PCS deployment and . . . their ability to raise capital." *Id.* at p.249. He opposed aggregation as a factor delaying deployment, reducing expected investment returns, and raising the cost of capital. *Id.* at pp.249-50.	• Actually, this is no surprise, since both speakers stated their preference for 30 MHz blocks, and antipathy for aggregation. However, such a proposal is entirely contrary to the idea of using the competitive marketplace as a discovery mechanism to drive the most efficient allocation of resources, and the most efficient production of cost-effective services.
• Both Ms. Peretsman and Mr. Roberts described 30 MHz blocks and MTAs as the minimum viable market. *Id.* at pp.325-26.	• Mr. John Oxendine also criticized Mr. Roberts' thesis, observing that "we could take the whole 120 and give it to one person and be very efficient that way. The operation would be successful but the patient would be dead in that democracy wouldn't be served and there wouldn't be a whole lot of people involved." *Id.* at p.255.

The Claim - The Markets Will Hesitate to Fund PCS	**The Reality - Wireless Services Have Received Funding in the Recent Past, and Should Continue to Do So**
• David Kerr of BIS Strategies thinks that it will be hard to raise capital outside of the top 10 to 15 MTAs. */d.* at pp.67-68.	• Dr. Hausman expressed the opinion that the capital markets will fund PCS, as they have funded ESMRs, and that aggregation will not be a problem. April 11 Transcript at 215. • In fact, the companies most interested in and capable of raising money and bidding for PCS licenses in markets across the entire nation face the prospect of restriction from the marketplace. Cellular companies already provide voice service and have the most incentives to go beyond their current geographic boundaries and to provide new services both in- and out-of-region.
• Financial panelist Mr. Rissman suggested that markets with 150,000 to 200,000 customers *per carrier* are "not all that viable." */d.* at p.281.	• This pessimism is astounding, since such customer numbers can equate to an annual cash flow per market of between $36 and $96 million (assuming average monthly bills between $20 and $40 -- such figures having been suggested by various PCS proponents). But, then again, there were critics who believed that the similarly-sized cellular RSA markets were not viable. • Dr. Jacobs also observed that applications attuned to BTAs are feasible, if a BTA-based system is adopted. */d.* at p.118.

The Claim - Big Blocks Are Necessary for PCS Funding

- Donald Gips asked what size spectrum blocks were necessary in order to obtain financing.

- Paul Rissman indicated that "right now we don't know what the size of the spectrum award is that will work. We have consultant studies that say 20 MHz is fine. We have consultant studies that say 30 MHz is fine. We have consultant studies that say you need at least 40 MHz." Noting that in the U.K Mercury One-2-One has 50 MHz, he observed "What we would like to see is a spectrum grant that we know is going to work. We do not want to see a spectrum grant where we will be scratching our heads saying, boy, if this doesn't work our money is down the drain." *Id.* at pp.250-51.

- Mr. Roberts stated that he thought 30 MHz "appears to be about the minimum size particularly if you are going to deploy services in third and fourth-tier markets" and provide multimedia services. *Id.* at p.252.

- Mr. Roberts indicated that his firm has raised about $ 400 million in the past six months for technically sophisticated potential PCS entrants -- but when given an example indicated that they would probably fund a PCS licensee after winning the license, rather than before. *Id.*

The Reality - A Broad Range of Possibilities Exist, and Predictions Are Based on Case-Specific Assumptions

- Mr. Wilkins disagreed with the premises advanced by the various bankers saying that "this is an industry that is going to be around for quite a long time. To structure it now so that it merely rides on the basis of what technology exists, ignores the fact that there are probably entrepreneurs right in this room who have ideas who would allow the development of the spectrum in such a way with different technology to serve different market interests."

- Mr. Wilkins observed that the financiers and the Commission appear to be assuming that the spectrum will be used solely to deploy cellular service, and not for innovative applications, and stated "If the Commission goes the way of the Wall Street we will have pure cellular systems competing head to head on the basis of price, solely on the basis of price without anybody making any money and without the country having the kind of service that we would all like to see it have." *Id.* at pp.271-72.

The Claim - Big Blocks Are Necessary for PCS Funding	**The Reality - A Broad Range of Possibilities Exist, and Predictions Are Based on Case-Specific Assumptions**
• Peretsman and Rissman indicated that they would fund the largest blocks, in the largest markets, and that aggregated blocks in the larger markets might get funded (Peretsman), but that smaller blocks and smaller markets would not get funded without aggregation into MTA sized entities. (*e.g.*, Rissman, pp. 268-70).	• Mr. Wilkins responded by saying that blocks of more than 30 MHz were approaching overkill, noting that smaller blocks such as ESMR uses are being funded, and that a ubiquitous digital service could be provided with 20 MHz. *Id.* at p.253.
• Mr. Roberts responded to Mr. Oxendine by noting that cellular after-market transactions were still on-going, and that he would want to know what a new PCS provider's plan was for competing with cellular, its cost structure, and marketing strategy -- and that the resulting capital would be difficult to find and expensive by contrast with the existing cellular service provider's cost of capital. *Id.* at pp.259-60.	• Mr. Oxendine criticized the larger blocks as advantaging the bigger players in the capital markets, and argued for more uniform spectrum block sizes in order to foster participation, cooperation, and partnering. *Id.* at p.256. In response to a panel question, he noted the advantages which the larger players will have in establishing strategic alliances and joint ventures, noting that "I'm suggesting that we open it up so everybody can play. And I don't hear that from your side of the table." *Id.* at pp.258-59.
• Mr. Roberts responded that "I don't think that just legislating alliances or regulating alliances will result in the sort of service proliferation and the prices falling to the point that consumers will be benefitted." *Id.* at pp.262-63.	•Mr. Oxendine responded by noting that Mr. Roberts had assumed exclusivity, the nonexistence of partnerships or alliances with cellular and other players. *Id.*

The Claim - the Proposed Spectrum Allocation for PCS is Impractical for Subsequent Aggregation	The Reality - Multi-based/Multi-mode handsets are feasible and are being developed • John Battin indicated that "I think that this [the difference in cost between a handset that works from the current unlicensed band to the 1800 band and a handset that works from the current unlicensed band to the 2100 band] somewhat depends on the technology that you use, but I think in most of the technologies it's relatively inexpensive. Maybe it's 5 or 10 percent to have a subscriber unit that can interoperate in unlicensed band, you know, let's say within the one dot eight range. But shifting up to two dot one, you know, it's probably in that 20 to 25 percent range." April 12 Transcript at p.124.